

Serial No.: 10/717,630
Atty. Docket No.: P68978US0

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for processing polyethylene terephthalate polymers into pellets using an apparatus including an underwater pelletizer and a dryer, said method comprising:

extruding strands of polyethylene terephthalate polymer through a die plate for cutting in said underwater pelletizer;

cutting the polyethylene terephthalate polymer strands into pellets in a cutting chamber of said pelletizer;

transporting said polyethylene terephthalate pellets out of said cutting chamber ~~to said dryer~~ as a water and pellet slurry; and

injecting a high velocity gas into said water and pellet slurry to ~~generate~~ convert the water into a water vapor mist and enhance the speed of the pellets into and out of said dryer, with said pellets retaining sufficient internal heat upon exiting said dryer for crystallization of said pellets without a second heating stage.

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2. (Previously Presented) The method as claimed in claim 1 wherein said polyethylene terephthalate pellets exiting said dryer are placed in a heat insulating container.

3. (Previously Presented) The method as claimed in claim 1 wherein said polyethylene terephthalate pellets exit said dryer at a mean temperature above about 135°C.

4. (Previously Presented) The method as claimed in claim 3 wherein said polyethylene terephthalate pellets exit said dryer at a temperature above about 145°C.

5. (Previously Presented) The method as claimed in claim 1 wherein said step of transporting said polyethylene terephthalate pellets out of said pelletizer to said dryer includes substantially straight transporting said slurry upwardly at an angle from the vertical between 30° and 60°.

6. (Original) The method as claimed in claim 5 wherein said angle is about 45°.

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7. (Original) The method as claimed in claim 1 wherein said pressurized gas is air.

8. (Previously Presented) The method as claimed in claim 1 wherein said gas is injected substantially in alignment with a flow direction of said water and pellet slurry.

Claims 9-15. (Canceled).

16. (Currently Amended) A method for processing crystallizing polymeric materials into pellets, which comprises:
extruding into strands a crystallizing polymeric material having sufficient heat for crystallization into strands;
cutting the extruded strands into pellets in a water stream;
transporting said pellets in said water stream as a water and pellet slurry; and
injecting an inert gas at a high velocity into said pellet and water slurry such that said pellets retain sufficient heat for crystallization of said polymeric material without the application of external heat a second heating stage.

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17. (Previously Presented) The method of claim 16 wherein said material includes polyethylene terephthalate polymer.

18. (Previously Presented) The method as claimed in claim 1 wherein said high velocity gas is injected at a flow rate of at least about 100 cubic meters per hour at a pressure of about 8 bar.

19. (Previously Presented) The method as claimed in claim 1 wherein said vapor mist has a gas component of about 98% by volume.

20. (Previously Presented) The method of claim 1 wherein the gas injected into said slurry increases pellet flow speed from the pelletizer to an exit of said dryer to a rate of less than about one second.

21. (Previously Presented) The method of claim 16 wherein the gas injected into said slurry increases pellet flow speed from a pelletizer at said step of extrusion to dryer exit to a rate of less than about one second.

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22. (Previously Presented) The method of claim 16 wherein said polymeric material is a high temperature crystallizing polymeric material and said pellets are cooled in said water stream.

23. (Cancelled).

24. (Currently Amended) A method for processing polyethylene terephthalate polymers into crystallized pellets using an apparatus having an underwater pelletizer, and a centrifugal dryer and transportation piping therebetween, said method comprising:

cutting polyethylene terephthalate polymer strands into pellets in the underwater pelletizer;

transporting said pellets out of said pelletizer and into said transportation piping as a water and pellet slurry; and

introducing a high velocity inert gas into said water and pellet slurry in said transportation piping to separate the water from the pellets; and enhance the speed of said pellets through

transporting all of said water and pellets into said centrifugal dryer located downstream of said gas introduction,

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said pellets exiting said dryer with sufficient internal heat for crystallization of said pellets.

25. (Previously Presented) The method of claim 24 wherein the gas introduced into said slurry increases a speed of pellet flow from said pelletizer to an exit of said dryer to a rate of less than about one second.

26. (Previously Presented) The method of claim 24 wherein said step of introducing a high velocity gas includes injecting said gas at a flow rate of about 100 cubic meters per hour at a pressure of about 8 bar.

27. (Previously Presented) The method of claim 26 wherein said injected gas produces a water vapor mist having a gas component of about 98% by volume.

28. (Previously Presented) The method of claim 24 wherein crystallization of said pellets occurs using only said internal heat retained from extrusion and in an absence of any secondary heating step while passing through said apparatus.